

Appendix B

Meteorological Data

This section contains meteorological data derived from various regulatory and non-regulatory sites. The data provides a comparative analysis of winds speed, wind direction, wind gusts and concentration data. Please note that meteorological instruments measure at different heights, and at different time intervals. By taking, the actual time of measurement and assuring that all data represented is in Pacific Standard Time (PST) there is uniformity of the data. In addition, not all stations measure at the exact same time, i.e. measurements at 053 and 056 therefore, comparisons are measurements within a 60-minute period. While there may be some overlapping and slight differences the comparative analysis provides the reader with a better understanding of the regional effect of the Exceptional Event.

FIGURE B-1
METEOROLOGICAL AND AIR QUALITY SITES REFERENCED IN THIS DOCUMENT

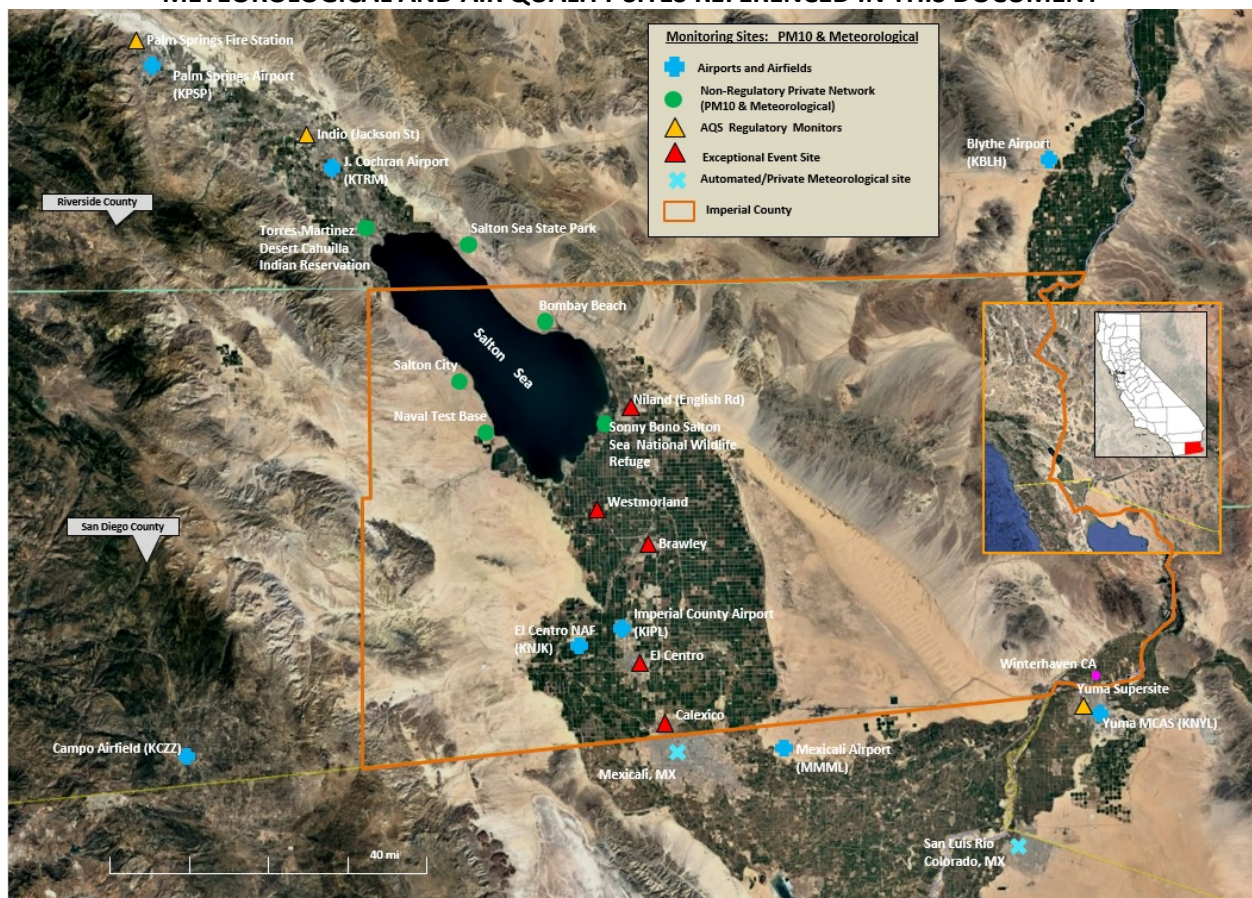


Fig. B-1: A collection of meteorological and air quality sites referenced in this document. Base map from Google Earth.

IMPERIAL COUNTY SITES FIGURES B-2 THROUGH B-9

FIGURE B-2
IMPERIAL COUNTRY AIRPORT (KIPL)
WIND SPEED (AVERAGES), GUSTS & DIRECTION

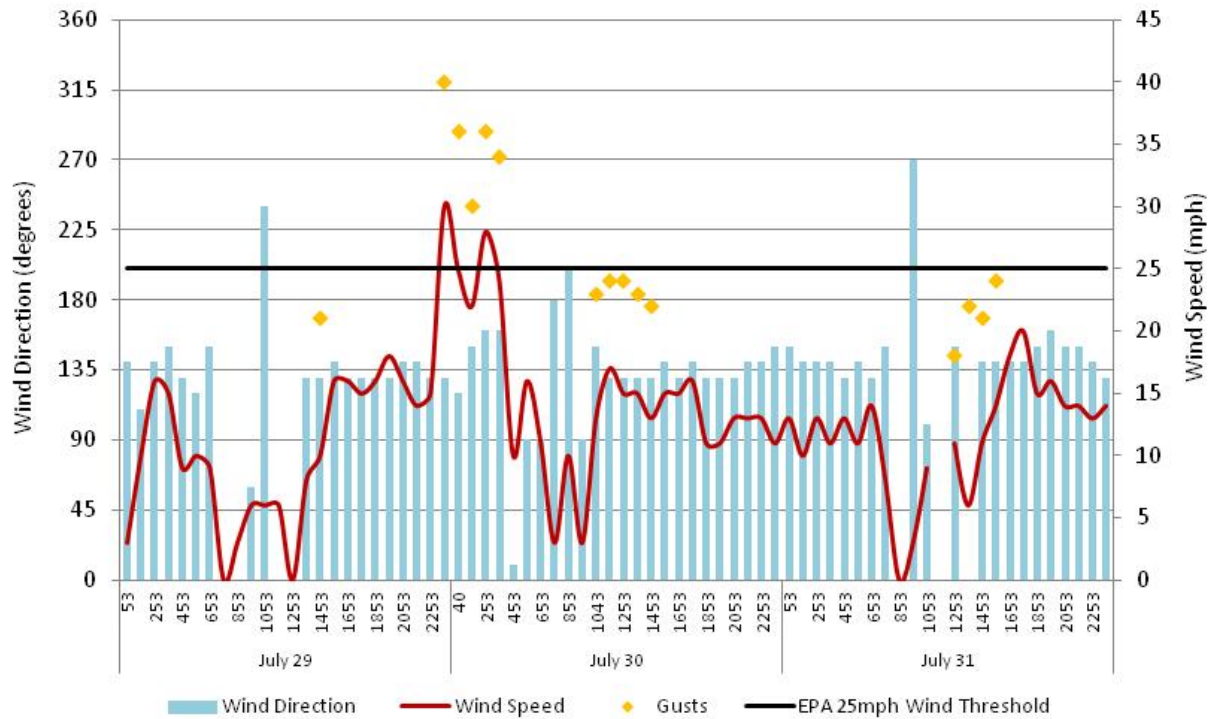
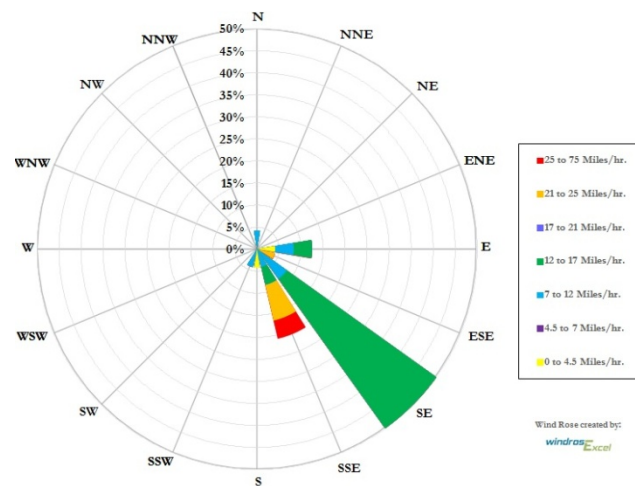


FIGURE B-3
IMPERIAL COUNTRY AIRPORT (KIPL) WIND ROSE – JULY 30



Figs. B-2 & B-3: Imperial Airport meteorological data for July 30 shows that southeast winds were over 25 mph on July 30. Wind data from the NCEI's QCLCD system.

FIGURE B-4
EL CENTRO NAF (KNJK)
WIND SPEED (AVERAGES), GUSTS & DIRECTION

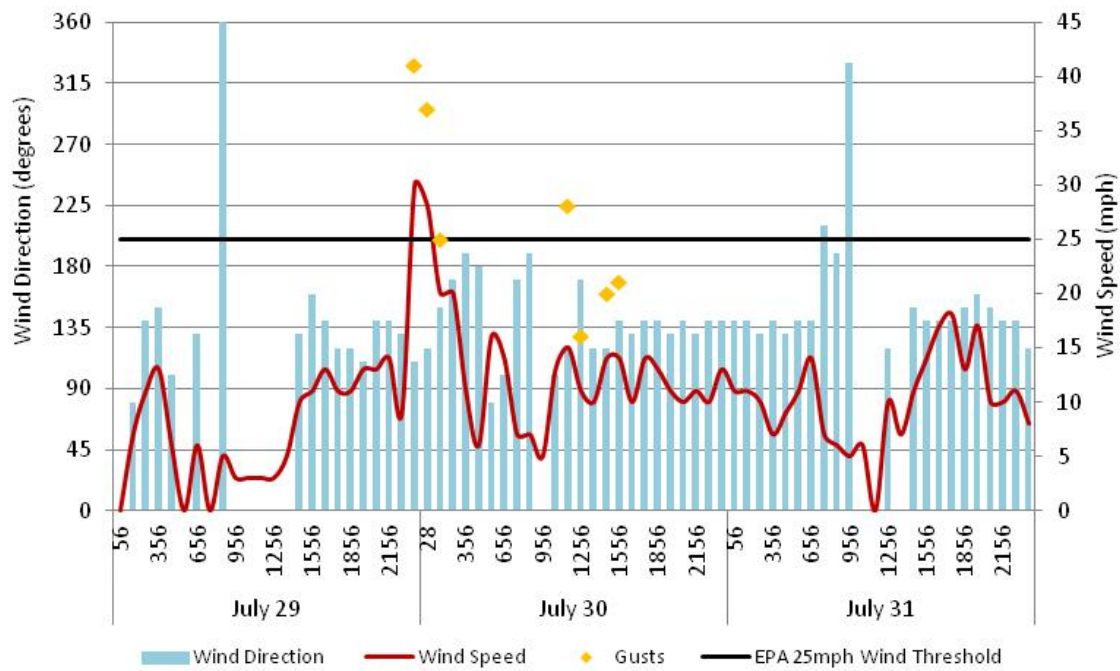
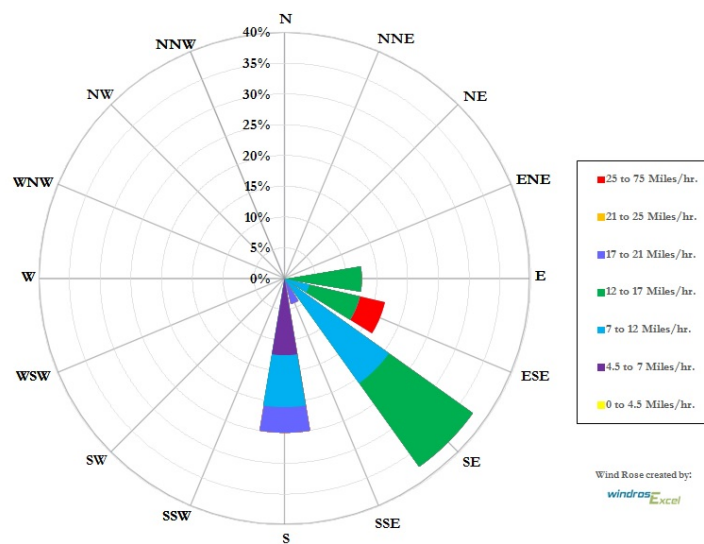
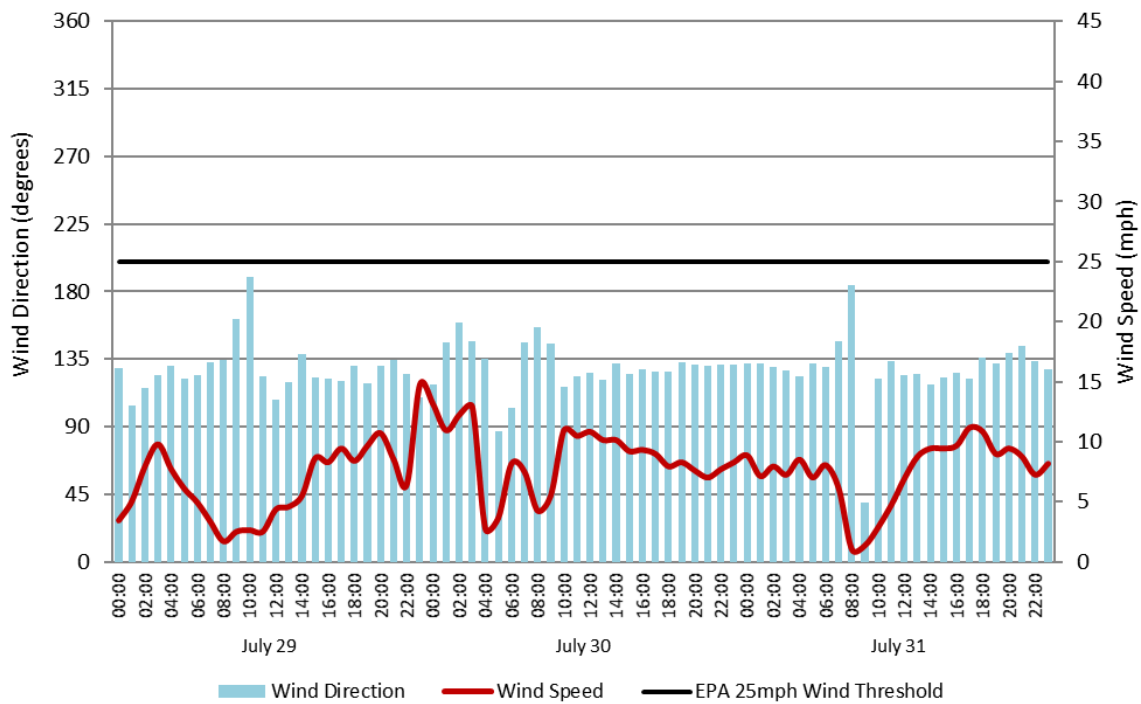


FIGURE B-5
EL CENTRO NAF (KNJK) WIND ROSE – JULY 30

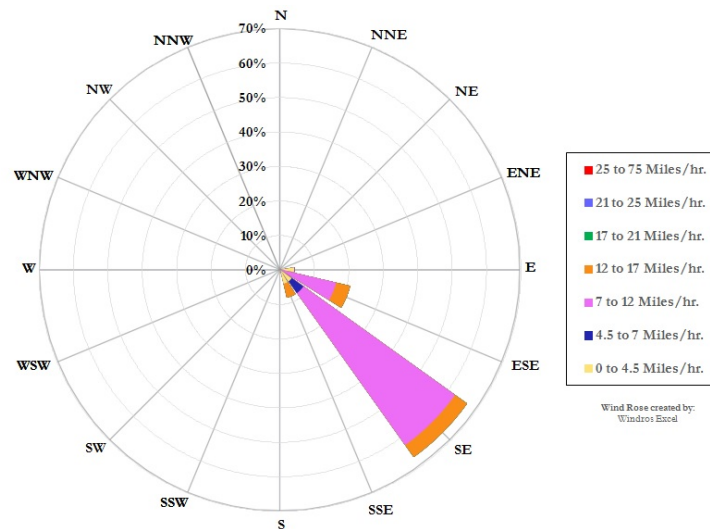


Figs. B-4 & B-5: El Centro NAF meteorological data for July 30 shows that southeast winds were over 25 mph. Wind data from the NCEI's QCLCD system.

**FIGURE B-6
CALEXICO
WIND SPEED & DIRECTION**

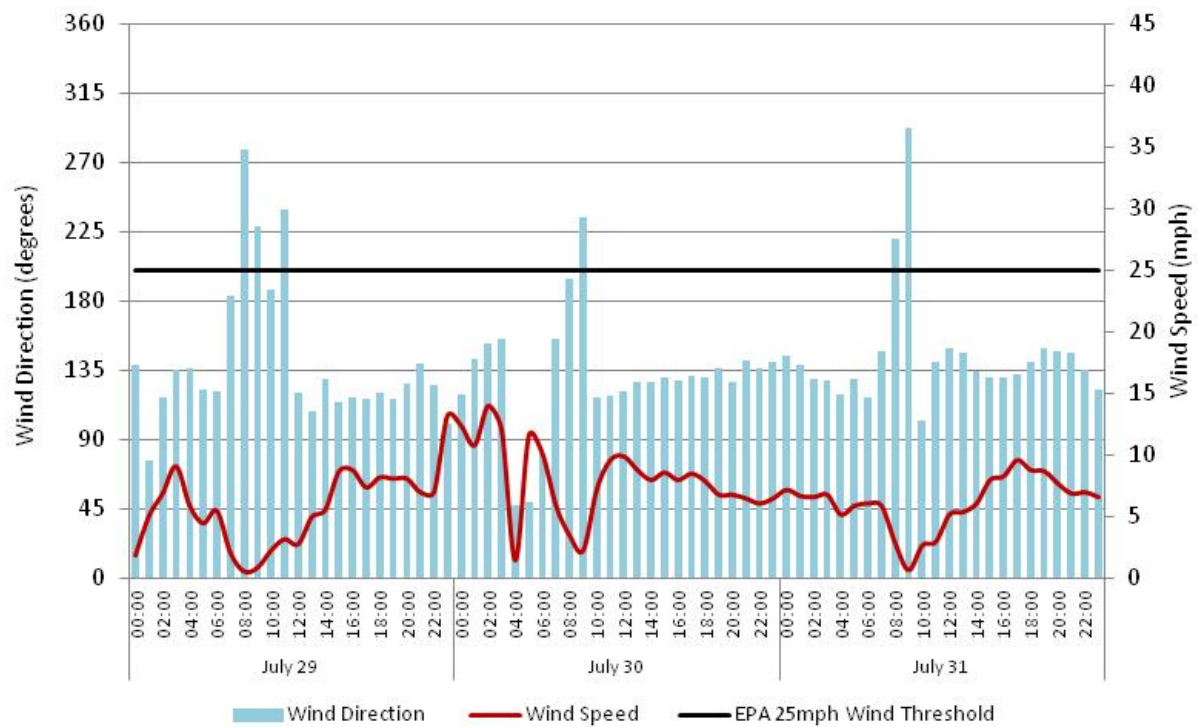


**FIGURE B-7
CALEXICO WINDROSE – JULY 30**

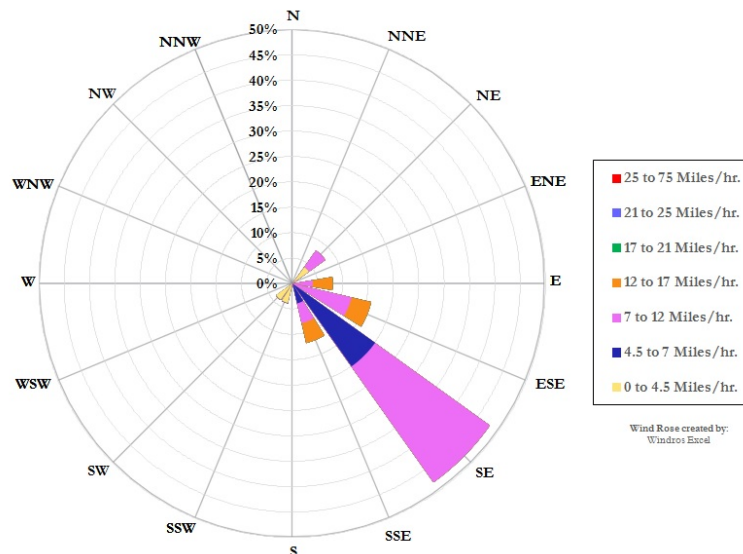


Figs. B-6 & B-7: Calexico meteorological data for July 30 shows a distinct southeast direction. Wind data from the EPA's AQS data bank.

FIGURE B-8
EL CENTRO (9TH St)
WIND SPEED & DIRECTION



FIGURES B-9
EL CENTRO (9TH ST) WIND ROSE – JULY 30



Figs. B-8 & B-9: El Centro station meteorological data for July 30 shows a distinct southeast direction. Wind data from the EPA's AQS data bank.

FIGURE B-10
NILAND (ENGLISH RD)
WIND SPEED & DIRECTION

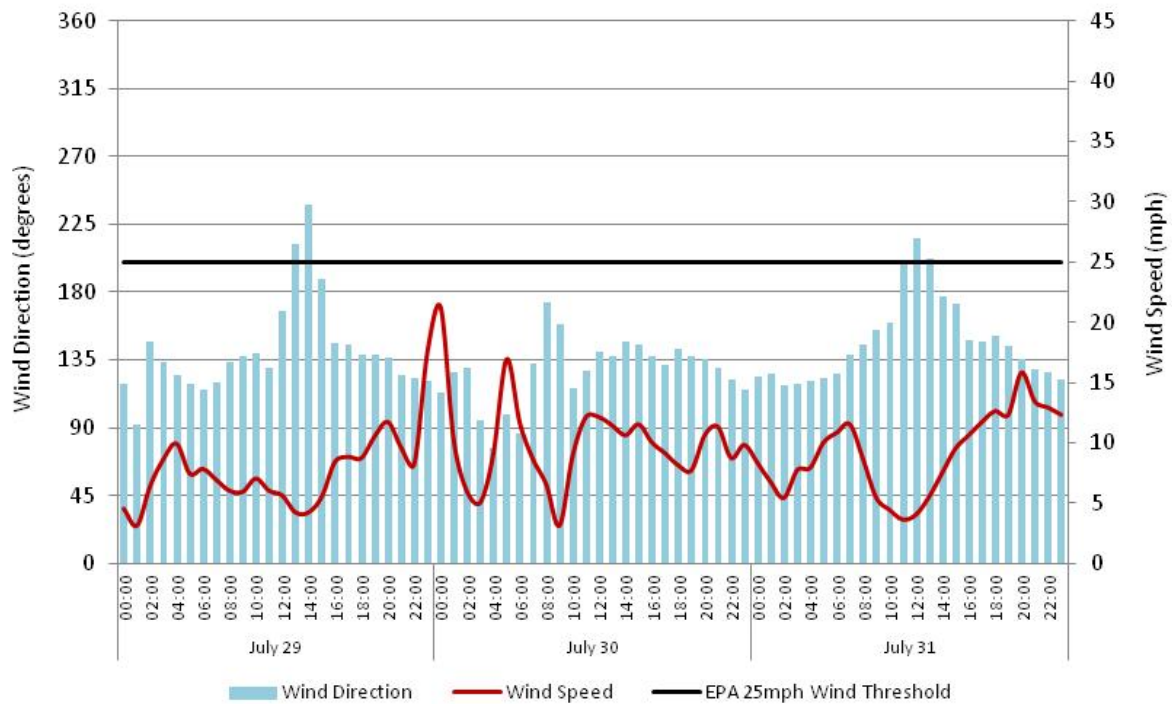
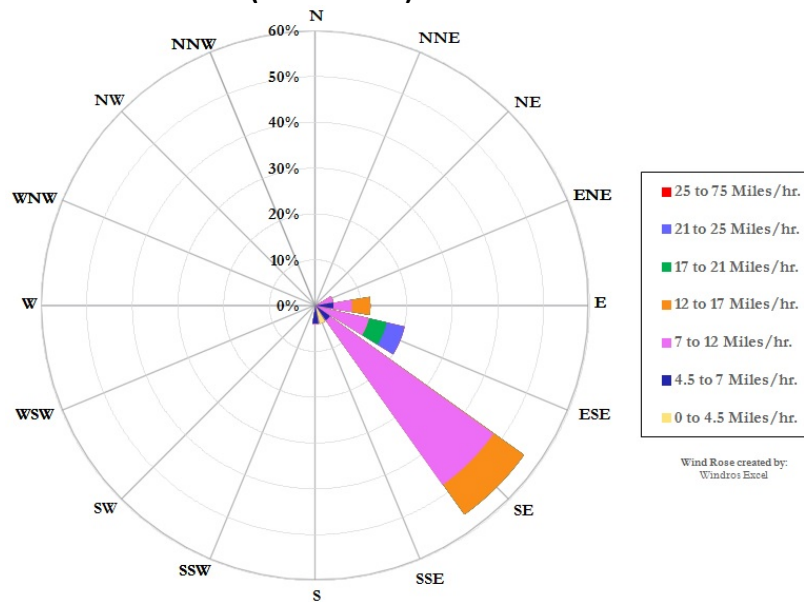


FIGURE B-11
NILAND (ENGLISH RD) WINDROSE – JULY 30



Figs. B-10 & B-11: Niland wind data for July 30 shows a distinct southeast direction. Wind data from the EPA's AQS data bank.

FIGURE B-12
WESTMORLAND
WIND SPEED & DIRECTION

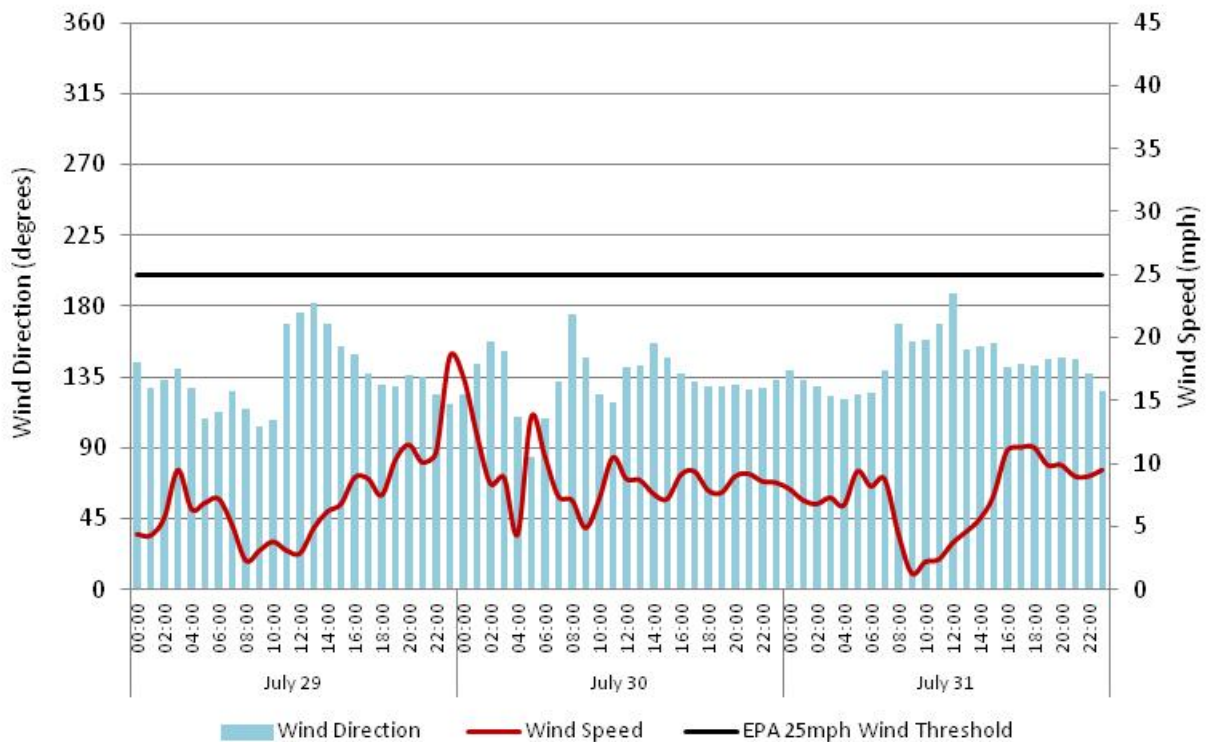
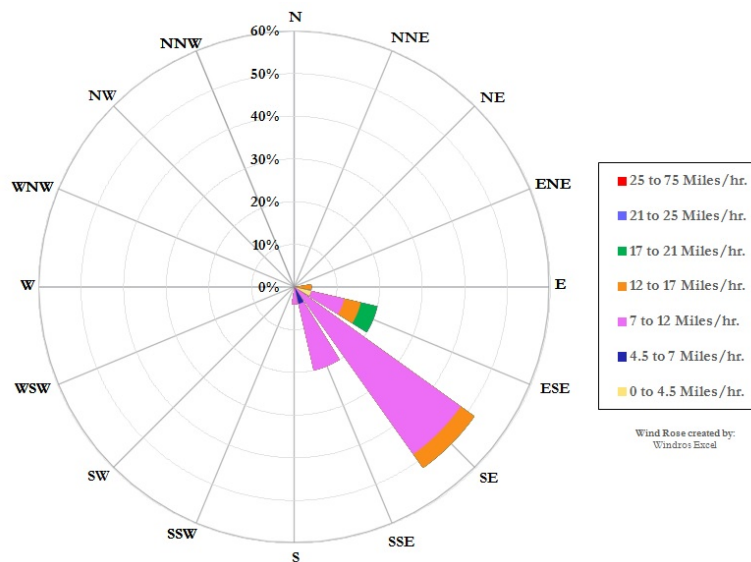


FIGURE B-13
WESTMORLAND WINDROSE – JULY 30



Figs. B-12 & B-13: Westmorland station meteorological data for July 30 shows a distinct southeast direction. Wind data from the EPA's AQS data bank.

EASTERN RIVERSIDE COUNTY SITES

FIGURE B-14
BLYTHE AIRPORT (KBLH)
WIND SPEED (AVERAGES), GUSTS & DIRECTION

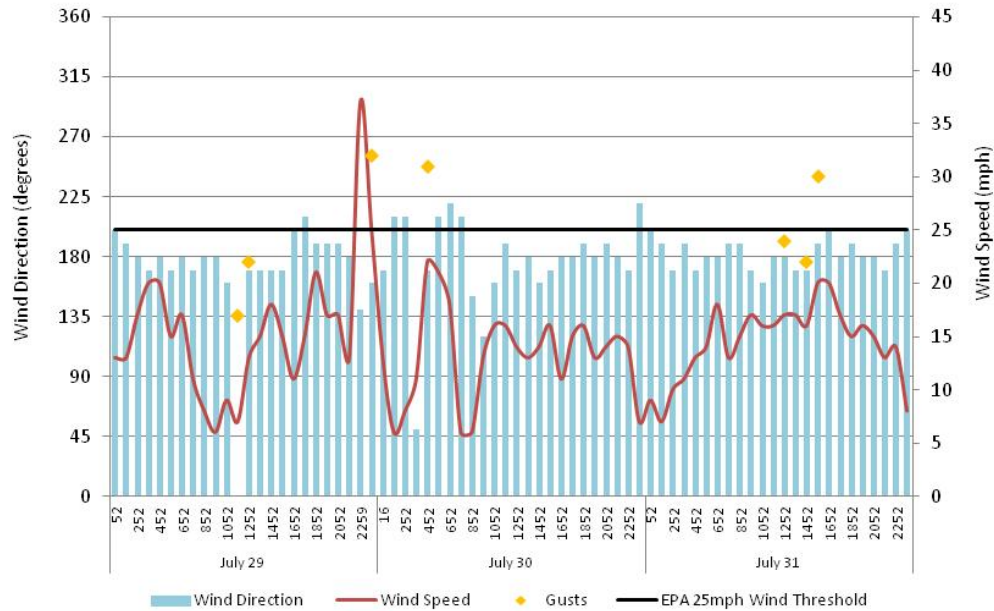


Fig. B-14: Wind data from the NCEI's QCLCD system.

FIGURE B-15
JACQUELINE COCHRAN REGIONAL AIRPORT (KTRM)
WIND SPEED (AVERAGES), GUSTS & DIRECTION

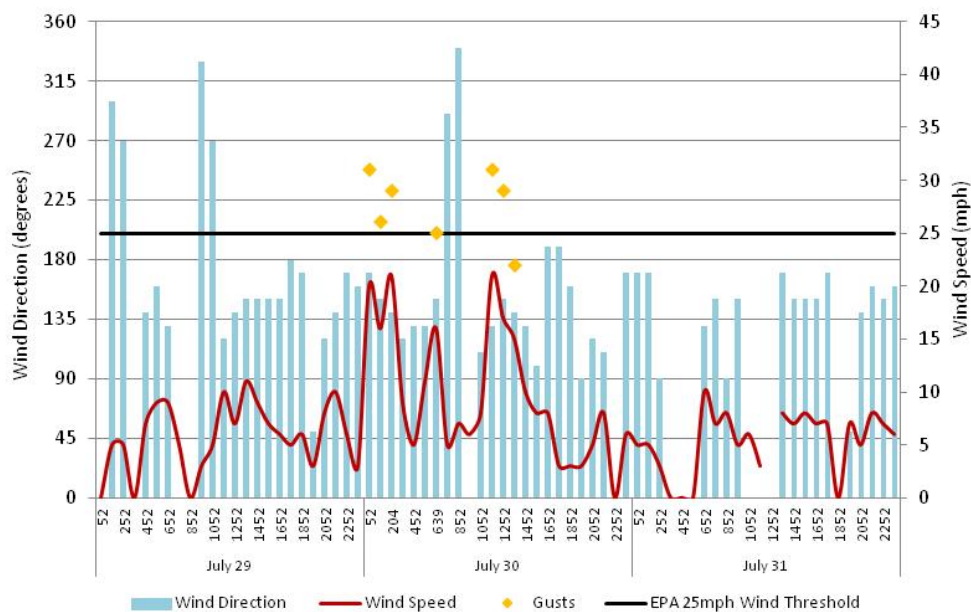


Fig. B-15: Wind data from the NCEI's QCLCD system.

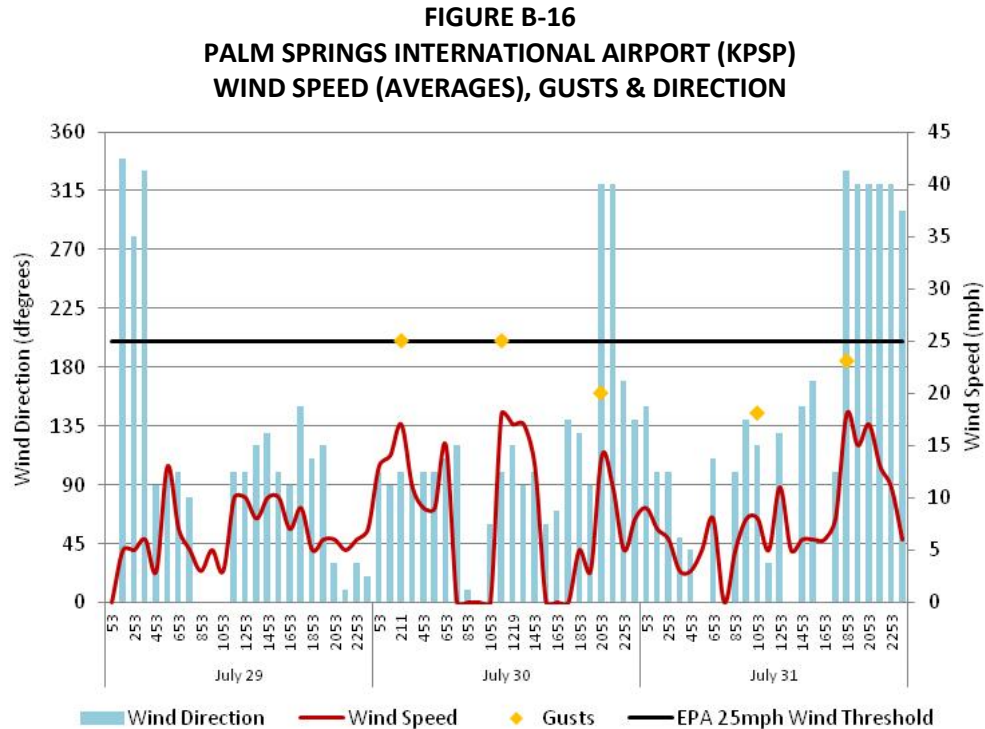


Fig. B-16: Wind data from the NCEI's QCLCD system.

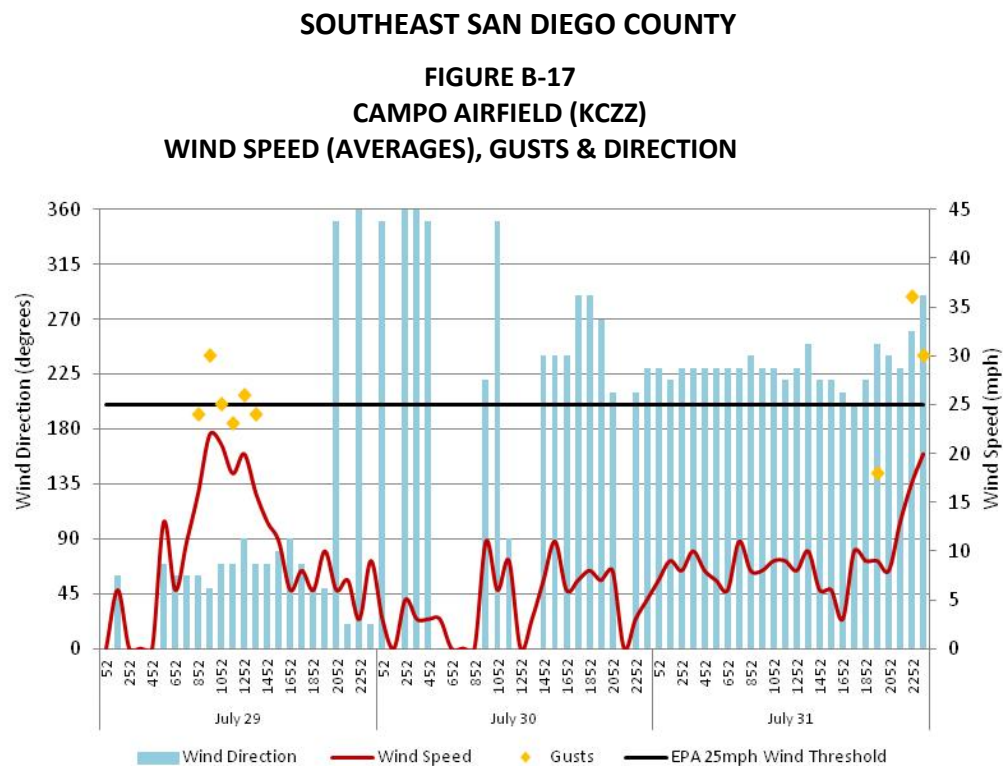


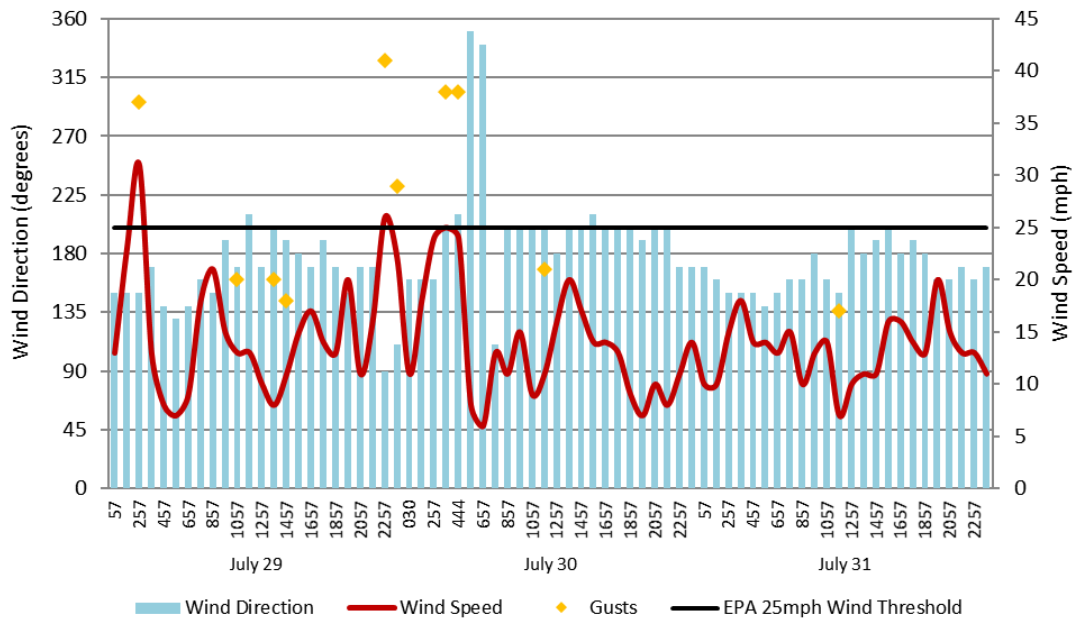
Fig. B-17: Wind data from the NCEI's QCLCD system.

UPSTREAM WIND SITES

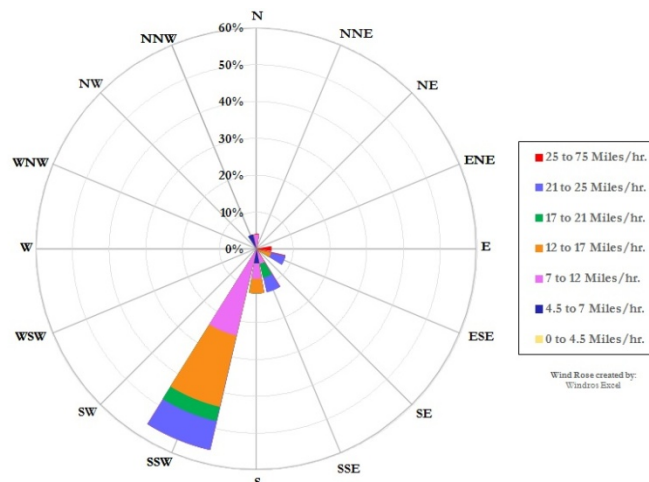
The following sites were upstream from Imperial County during the July 30 wind event.

SOUTHWESTERN ARIZONA

FIGURE B-18
YUMA MCAS (KNYL)
WIND SPEED (AVERAGES), GUSTS & DIRECTION



FIGURES B-19 & B-20
YUMA MCAS WIND ROSE – JULY 30



Figs. B-18 & B-19: Yuma MCAS (KNYL) had winds of 25 mph along with gusts of 38 mph. Although the wind rose shows winds from the SSW, this was influenced by a period of northerly winds. Data from the NCEI QCLCD system.

MEXICO

FIGURE B-20

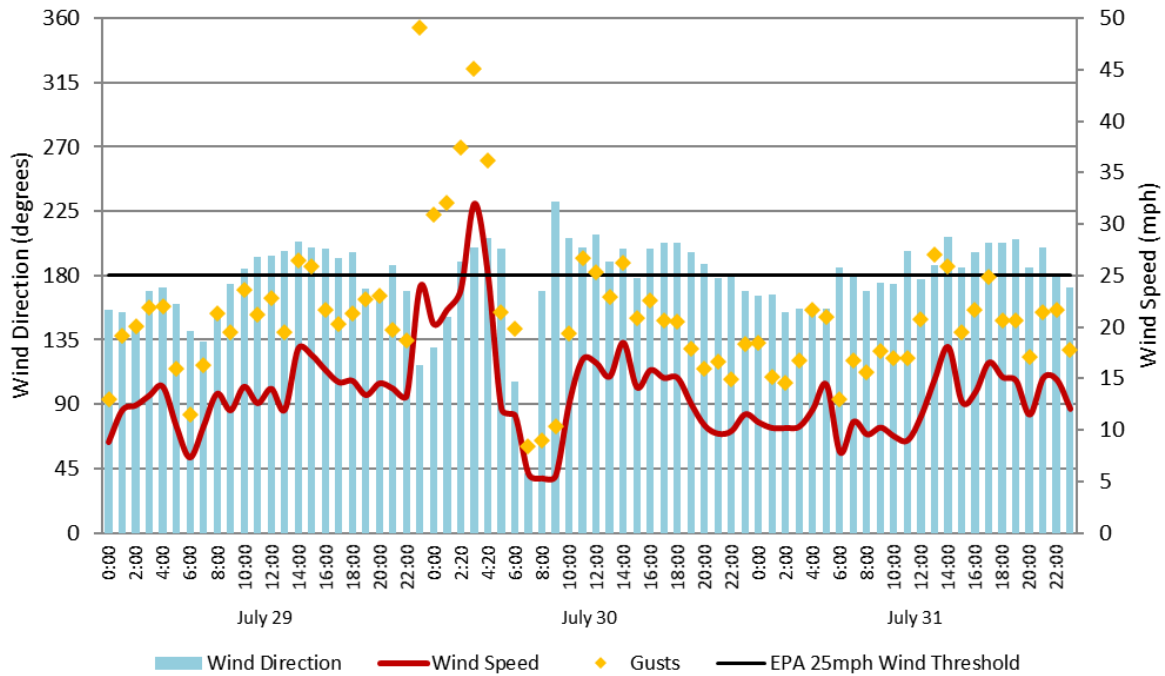
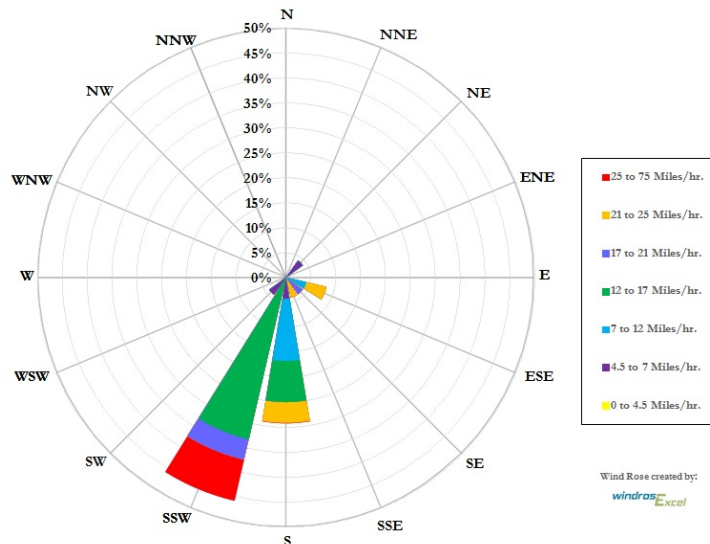
SAN LUIS COLORADO, MEXICO
WIND SPEED (AVERAGES), GUSTS & DIRECTION

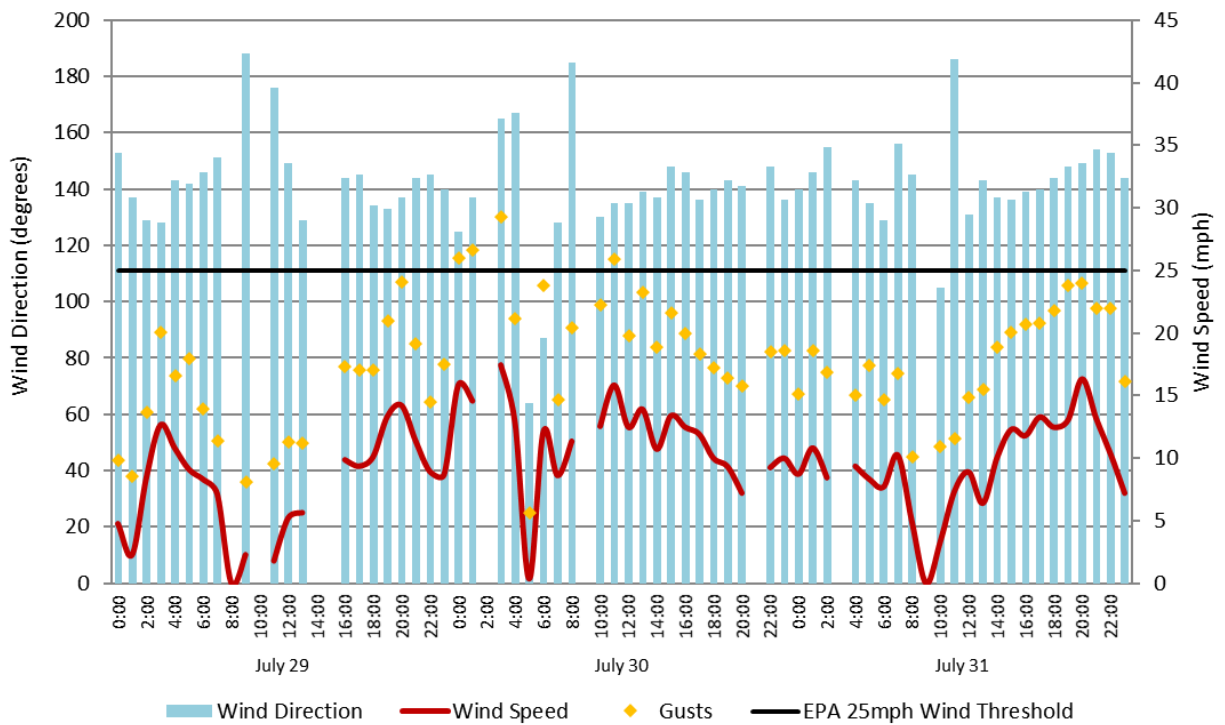
FIGURE B-21

SAN LUIS COLORADO, MEXICO WIND ROSE – JULY 30

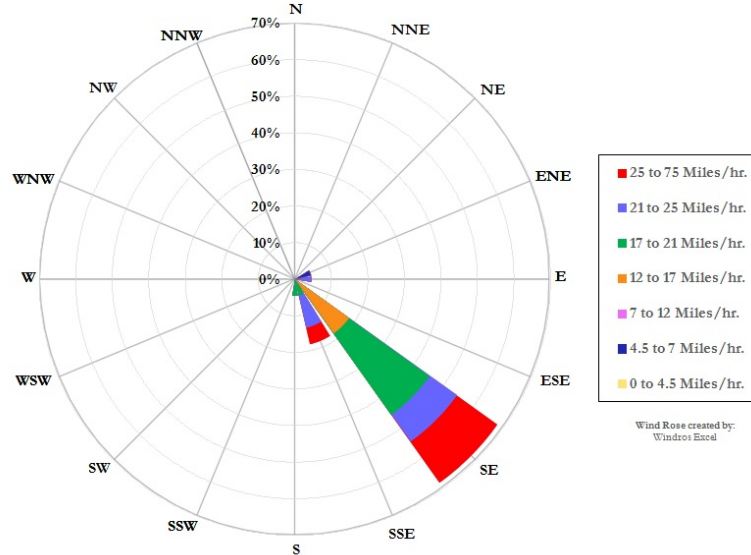


Figs. B-20 & B-21: San Luis Colorado, Mexico (Station ID: SLRS6) had both winds of 25 mph. Gusts were 49 mph. Wind rose shows a SSW bent. Data from the University of Utah's MesoWest.

FIGURE B-22
MEXICALI, MEXICO
WIND SPEED (AVERAGES), GUSTS & DIRECTION



FIGURES B-23
MEXICALI, MX WIND ROSE – JULY 30



Figs. B-22 & B-23: Mexicali, Mexico (Station ID: MXCB1) did not have winds of 25 mph but gusts were above 25 mph (wind rose shows gusts). Data from the University of Utah's MesoWest.

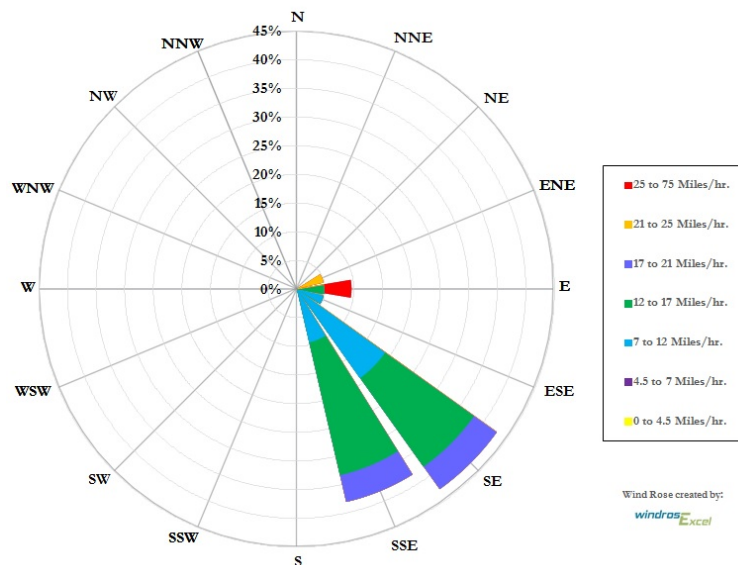
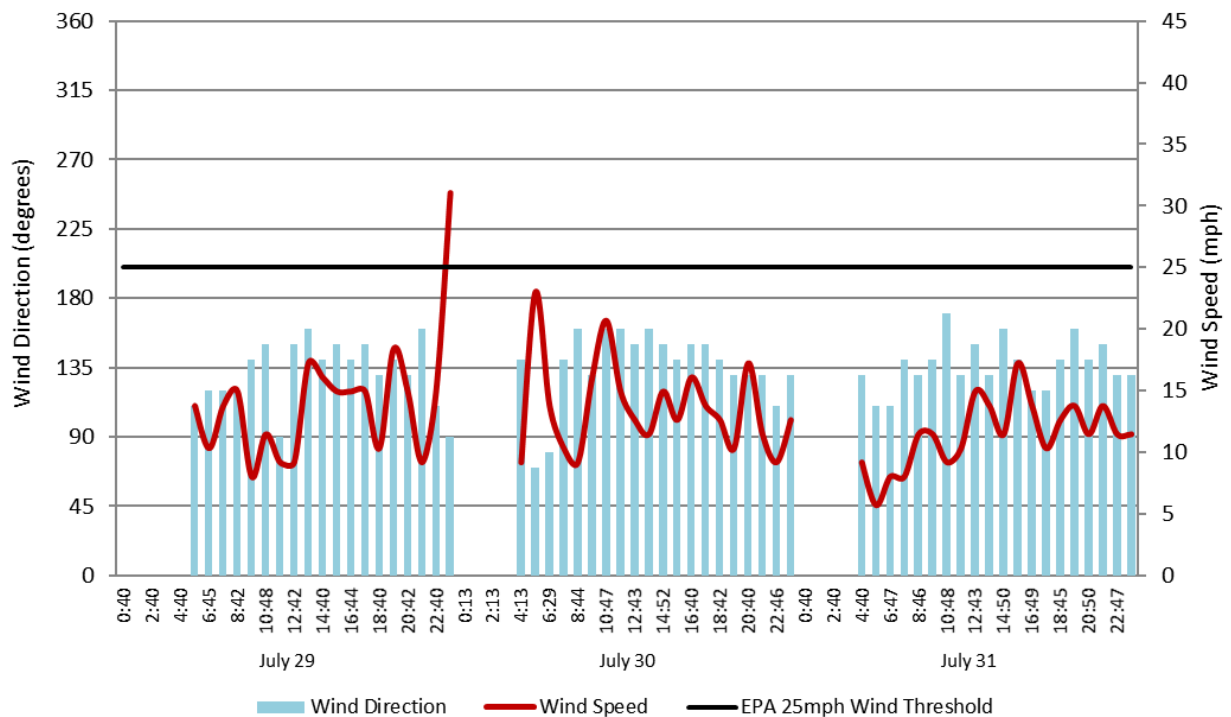


FIGURE B-26 IMPERIAL COUNTY AIRPORT (KIPL) QCLCD – JULY 29

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data, and Information Service
Elev: -58 ft. Lat: 32.8342° N Lon: -115.5786° W
Station: IMPERIAL CO AIRPORT, CA US WBAN:03144

Local Climatological Data Hourly Observations July 2016 Generated on 06/19/2017

National Centers for Environmental Information
151 Patton Avenue
Asheville, North Carolina 28801

Date	Time (LST)	Station Type	Sky Conditions	Visi- bility	Weather Type (see documentation)	Dry Bulb Temp		Wet Bulb Temp		Dew Point Temp		Rel Hum %	Wind Speed (MPH)	Wind Dir (Deg)	Wind Gusts (MPH)	Station Press (inHg)	Press. Tend	Net 3-Hr Change (inHg)	Sea Level Press. (inHg)	Report Type	Precip Total (in)	Alti-meter Setting (inHg)
						(F)	(C)	(F)	(C)	(F)	(C)											
29	0053	7	CLR:00	10.00	AU AW MW	91	32.8	80	26.9	74	23.3	57	3	140		29.73	8	+0.01	29.67	FM-15	0.00	29.67
29	0153	7	CLR:00	10.00		89	31.7	79	26.3	74	23.3	61	10	110		29.75			29.69	FM-15	0.00	29.69
29	0253	7	CLR:00	10.00		89	31.7	80	26.5	75	23.9	63	16	140		29.76			29.70	FM-15	0.00	29.70
29	0353	7	CLR:00	10.00		88	31.1	80	26.5	76	24.4	68	15	150		29.76	1	-0.04	29.70	FM-15	0.00	29.70
29	0453	7	CLR:00	10.00		87	30.6	80	26.5	77	25.0	72	9	130		29.78			29.72	FM-15	0.00	29.72
29	0553	7	CLR:00	10.00		88	31.1	81	27.1	78	25.6	73	10	120		29.78			29.72	FM-15	0.00	29.72
29	0653	7	CLR:00	10.00		91	32.8	82	27.5	77	25.0	64	9	150		29.80	1	-0.03	29.74	FM-15	0.00	29.74
29	0753	7	CLR:00	10.00		93	33.9	83	28.1	77	25.0	60	0	000		29.80			29.75	FM-15	0.00	29.74
29	0853	7	CLR:00	10.00		97	36.1	85	29.4	76	24.4	51	3	VRB		29.81			29.75	FM-15	0.00	29.75
29	0953	7	CLR:00	10.00		101	38.3	88	31.0	75	23.9	44	6	060		29.81	1	-0.01	29.75	FM-15	0.00	29.75
29	1053	7	CLR:00	10.00		103	39.4	90	32.0	75	23.9	41	6	240		29.79			29.73	FM-15	0.00	29.73
29	1153	7	CLR:00	10.00		106	41.1	93	34.0	72	22.2	34	6	VRB		29.76			29.70	FM-15	0.00	29.70
29	1253	7	CLR:00	10.00		109	42.8	97	36.1	71	21.7	30	0	000		29.74	8	+0.07	29.68	FM-15	0.00	29.68
29	1353	7	CLR:00	10.00		110	43.3	98	36.6	72	22.2	30	8	130		29.71			29.65	FM-15	0.00	29.65
29	1453	7	CLR:00	10.00		112	44.4	100	37.8	73	22.8	29	10	130	21	29.67			29.61	FM-15	0.00	29.61
29	1553	7	CLR:00	10.00		111	43.9	99	37.1	73	22.8	30	16	140		29.66	6	+0.08	29.60	FM-15	0.00	29.60
29	1653	7	CLR:00	10.00		109	42.8	96	35.6	74	23.3	33	16	130		29.64			29.58	FM-15	0.00	29.58
29	1753	7	CLR:00	10.00		107	41.7	95	34.9	70	21.1	31	15	130		29.63			29.57	FM-15	0.00	29.57
29	1853	7	CLR:00	10.00		102	38.9	89	31.8	70	21.1	36	16	130		29.65	5	+0.01	29.59	FM-15	0.00	29.59
29	1953	7	CLR:00	10.00		97	36.1	85	29.2	74	23.3	48	18	130		29.69			29.63	FM-15	0.00	29.63
29	2053	7	CLR:00	10.00		95	35.0	83	28.2	72	22.2	47	16	140		29.70			29.64	FM-15	0.00	29.64
29	2153	7	CLR:00	10.00		94	34.4	82	27.9	73	22.8	51	14	140		29.70	1	-0.05	29.64	FM-15	0.00	29.64
29	2253	7	CLR:00	10.00		92	33.3	81	27.4	75	23.9	58	15	130		29.70			29.65	FM-15	0.00	29.64
29	2336	7	SCT:04 7	4.00	HZ:7 FU:05 HZ:05	91	32.8	81	27.1	75	23.9	59	25	110	37	29.76				FM-16		29.70
29	2350	7	BKN:07 9	4.00	HZ:7 FU:05 HZ:05	91	33.0	80	26.6	72	22.0	52	30	130	40	29.77				FM-16		29.71
29	2353	7	BKN:07 9	4.00	HZ:7 FU:05 HZ:05	93	33.9	81	27.3	71	21.7	49	26	130	40	29.76				FM-15	0.00	29.70

FIGURE B-27 IMPERIAL COUNTY AIRPORT (KIPL) QCLCD – JULY 30

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data, and Information Service
Elev: -58 ft. Lat: 32.8342° N Lon: -115.5786° W
Station: IMPERIAL CO AIRPORT, CA US WBAN:03144

Local Climatological Data Hourly Observations July 2016 Generated on 06/19/2017

National Centers for Environmental Information
151 Patton Avenue
Asheville, North Carolina 28801

Date	Time (LST)	Station Type	Sky Conditions	Vis- ibility	Weather Type (see documentation)	Dry Bulb Temp		Wet Bulb Temp		Dew Point Temp		Rel Hum %	Wind Speed (MPH)	Wind Dir (Deg)	Wind Gusts (MPH)	Station Press (inHg)	Press. Tend	Net 3-Hr Change (inHg)	Sea Level Press. (inHg)	Report Type	Precip Total (in)	Alti-meter Setting (inHg)
						(F)	(C)	(F)	(C)	(F)	(C)											
30	0001	7	OVC:08 15	6.00	HZ:7 FU:05 HZ:05	92	33.3	80	26.8	70	21.1	49	23	120	33	29.77				FM-16		29.71
30	0040	7	OVC:08 19	2.00	HZ:7 FU:05 HZ:05	93	33.9	81	27.1	67	19.4	42	25	120	36	29.78				FM-16		29.72
30	0053	7	OVC:08 13	1.25	HZ:7 FU:05 HZ:05	93	33.9	81	27.1	66	18.9	41	21	130	33	29.79	1	-0.08	29.73	FM-15	0.00	29.73
30	0111	7	OVC:08 11	1.50	HZ:7 FU:05 HZ:05	92	33.3	80	26.7	67	19.4	44	21	140	29	29.80				FM-16		29.74
30	0126	7	OVC:08 13	2.50	HZ:7 FU:05 HZ:05	92	33.3	80	26.7	67	19.4	44	22	150	30	29.81				FM-16		29.75
30	0135	7	BKN:07 13	5.00	HZ:7 FU:05 HZ:05	92	33.3	80	26.7	68	20.0	46	20	160		29.81				FM-16		29.75
30	0153	7	FEW:02 16	10.00		92	33.3	80	26.7	69	20.6	47	17	160		29.80			29.74	FM-15	0.00	29.74
30	0253	7	FEW:02 18	6.00	HZ:7 FU:05 HZ:05	92	33.3	80	26.7	68	20.0	46	28	160	36	29.81			29.75	FM-15	0.00	29.75
30	0311	7	FEW:02 9	6.00	HZ:7 FU:05 HZ:05	93	33.9	81	27.1	67	19.4	42	24	160	34	29.82				FM-16		29.76
30	0353	7	CLR:00	10.00		91	32.8	80	26.4	70	21.1	50	16	150		29.81	0	-0.02	29.75	FM-15	0.00	29.75
30	0453	7	CLR:00	10.00		90	32.2	79	26.0	70	21.1	52	10	010		29.84			29.78	FM-15	0.00	29.78
30	0553	7	FEW:02 25	7.00		88	31.1	79	26.0	74	23.3	63	16	090		29.89			29.83	FM-15	0.00	29.83
30	0653	7	SCT:04 19 BKN:07 110	4.00	HZ:7 FU:05 HZ:05	87	30.6	78	25.3	72	22.2	61	11	090		29.90	1	-0.07	29.84	FM-15	0.00	29.84
30	0753	7	FEW:02 85 SCT:04 110	8.00		88	31.1	78	25.8	73	22.8	61	3	180		29.89			29.83	FM-15	0.00	29.83
30	0853	7	CLR:00	10.00		93	33.9	82	27.5	73	22.8	52	10	200		29.84			29.78	FM-15	0.00	29.78
30	0953	7	CLR:00	10.00		94	34.4	82	27.9	73	22.8	51	3	090		29.86	5	+0.04	29.80	FM-15	0.00	29.80
30	1043	7	FEW:02 49	10.00		97	36.1	84	29.1	72	22.2	45	13	150	23	29.86				FM-16		29.80
30	1053	7	FEW:02 49	10.00		98	36.7	85	29.6	72	22.2	43	10	110		29.85			29.79	FM-15	0.00	29.79
30	1153	7	SCT:04 30	9.00		100	37.8	87	30.6	72	22.2	41	17	130	24	29.84			29.78	FM-15	0.00	29.78
30	1253	7	CLR:00	10.00		103	39.4	90	32.2	72	22.2	37	15	130	24	29.82	8	+0.04	29.76	FM-15	0.00	29.76
30	1353	7	CLR:00	10.00		102	38.9	89	31.7	71	21.7	37	15	130	23	29.81			29.75	FM-15	0.00	29.75
30	1453	7	CLR:00	10.00		103	39.4	90	32.4	70	21.1	35	13	130	22	29.78			29.72	FM-15	0.00	29.72
30	1553	7	CLR:00	10.00		104	40.0	91	33.0	70	21.1	34	15	140		29.76	8	+0.06	29.70	FM-15	0.00	29.70
30	1653	7	CLR:00	10.00		103	39.4	90	32.5	69	20.6	34	15	130		29.74			29.68	FM-15	0.00	29.68
30	1753	7	CLR:00	10.00		100	37.8	87	30.6	70	21.1	38	16	140		29.74			29.68	FM-15	0.00	29.68
30	1853	7	CLR:00	10.00		96	35.6	84	28.7	72	22.2	46	11	130		29.75	5	+0.01	29.69	FM-15	0.00	29.69
30	1953	7	CLR:00	10.00		94	34.4	82	27.7	71	21.7	48	11	130		29.77			29.71	FM-15	0.00	29.71
30	2053	7	CLR:00	10.00		91	32.8	80	26.8	73	22.8	56	13	130		29.79			29.73	FM-15	0.00	29.73
30	2153	7	CLR:00	10.00		90	32.2	80	26.8	75	23.9	62	13	140		29.80	1	-0.05	29.74	FM-15	0.00	29.74
30	2253	7	CLR:00	10.00		89	31.7	78	25.8	71	21.7	55	13	140		29.80			29.74	FM-15	0.00	29.74
30	2353	7	CLR:00	10.00		88	31.1	78	25.6	72	22.2	59	11	150		29.80			29.74	FM-15	0.00	29.74

FIGURE B-28 EL CENTRO NAF (KNJK) QCLCD – JULY 29

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data, and Information Service
Elev: -42 ft. Lat: 32.8167° N Lon: -115.6833° W
Station: EL CENTRO NAF, CA US WBAN:23199

Local Climatological Data Hourly Observations July 2016 Generated on 06/19/2017

National Centers for Environmental Information
151 Patton Avenue
Asheville, North Carolina 28801

Date	Time (LST)	Station Type	Sky Conditions	Visi- bility	Weather Type (see documentation) AU AW MW	Dry Bulb Temp		Wet Bulb Temp		Dew Point Temp		Rel Hum %	Wind Speed (MPH)	Wind Dir (Deg)	Wind Gusts (MPH)	Station Press (inHg)	Press. Tend	Net 3-Hr Change (inHg)	Sea Level Press. (inHg)	Report Type	Precip Total (in)	Altitude Setting (inHg)
						(F)	(C)	(F)	(C)	(F)	(C)											
29	0056	7	CLR:00	10.00		88	31.1	77	25.0	68	20.0	52	0	000		29.73	8	+0.01	29.74	FM-15		29.69
29	0156	7	CLR:00	10.00		86	30.0	77	24.8	71	21.7	61	7	080		29.75			29.75	FM-15		29.71
29	0256	7	CLR:00	10.00		87	30.6	78	25.5	73	22.8	63	11	140		29.76			29.76	FM-15		29.72
29	0356	7	CLR:00	10.00		87	30.6	79	26.0	75	23.9	67	13	150		29.77	1	-0.03	29.77	FM-15		29.73
29	0456	7	FEW:02 180 FEW:02 280	10.00		86	30.0	78	25.7	75	23.9	70	6	100		29.78			29.79	FM-15		29.74
29	0556	7	FEW:02 280	10.00		86	30.0	79	26.0	76	24.4	72	0	000		29.78			29.78	FM-15		29.74
29	0656	7	FEW:02 180 FEW:02 280	10.00		88	31.1	80	26.5	76	24.4	68	6	130		29.80	3	-0.03	29.80	FM-15		29.76
29	0756	7	FEW:02 180 FEW:02 280	10.00		91	32.8	80	26.9	74	23.3	57	0	000		29.80			29.81	FM-15		29.76
29	0856	7	FEW:02 80 FEW:02 280	10.00		94	34.4	82	27.9	73	22.8	51	5	360		29.81			29.81	FM-15		29.77
29	0956	7	FEW:02 80 FEW:02 280	10.00		99	37.2	86	30.1	72	22.2	42	3	VRB		29.81	1	-0.01	29.81	FM-15		29.77
29	1056	7	FEW:02 80	10.00		103	39.4	90	32.4	70	21.1	35	3	VRB		29.79			29.79	FM-15		29.75
29	1156	7	FEW:02 80 FEW:02 280	10.00		104	40.0	92	33.1	69	20.6	32	3	VRB		29.77			29.77	FM-15		29.73
29	1256	7	FEW:02 80 FEW:02 280	10.00		108	42.2	101	38.4	60	15.6	21	3	VRB		29.74	8	+0.07	29.75	FM-15		29.70
29	1356	7	FEW:02 80 FEW:02 280	10.00		110	43.3	101	38.1	66	18.9	24	5	VRB		29.71			29.71	FM-15		29.67
29	1456	7	FEW:02 80 FEW:02 280	10.00		110	43.3	100	37.8	67	19.4	25	10	130		29.67			29.68	FM-15		29.63
29	1556	7	FEW:02 80 FEW:02 280	10.00		110	43.3	100	37.8	67	19.4	25	11	160		29.66	6	+0.08	29.66	FM-15		29.62
29	1656	7	FEW:02 80 FEW:02 280	10.00		108	42.2	97	36.0	68	20.0	28	13	140		29.64			29.64	FM-15		29.60
29	1756	7	CLR:00	10.00		106	41.1	94	34.4	69	20.6	31	11	120		29.63			29.63	FM-15		29.59
29	1856	7	CLR:00	10.00		99	37.2	86	30.2	68	20.0	37	11	120		29.64	5	+0.01	29.65	FM-15		29.60
29	1956	7	CLR:00	10.00		94	34.4	82	27.7	70	21.1	46	13	110		29.68			29.68	FM-15		29.64
29	2056	7	CLR:00	10.00		94	34.4	82	27.7	71	21.7	48	13	140		29.70			29.70	FM-15		29.66
29	2156	7	CLR:00	10.00		92	33.3	80	26.9	71	21.7	51	14	140		29.69	0	-0.05	29.70	FM-15		29.65
29	2256	7	CLR:00	10.00		88	31.1	78	25.8	73	22.8	61	9	130		29.70			29.70	FM-15		29.66
29	2341	7	FEW:02 8	3.00	-RA:02 [RA:61]	89	31.7	79	26.1	73	22.8	59	29	110	41	29.75				FM-16	T	29.71
29	2356	7	FEW:02 8	6.00	-RA:02 [RA:61]	90	32.2	79	26.0	70	21.1	52	30	110	41	29.77				FM-15	T	29.73

FIGURE B-29 EL CENTRO NAF (KNJK) QCLCD – JULY 30

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data, and Information Service
Elev: -42 ft. Lat: 32.8167° N Lon: -115.6833° W
Station: EL CENTRO NAF, CA US WBAN:23199

Local Climatological Data Hourly Observations July 2016 Generated on 06/19/2017

National Centers for Environmental Information
151 Patton Avenue
Asheville, North Carolina 28801

Date	Time (LST)	Station Type	Sky Conditions	Visi- bility	Weather Type (see documentation) AU AW MW	Dry Bulb Temp		Wet Bulb Temp		Dew Point Temp		Rel Hum %	Wind Speed (MPH)	Wind Dir (Deg)	Wind Gusts (MPH)	Station Press (inHg)	Press. Tend	Net 3-Hr Change (inHg)	Sea Level Press. (inHg)	Report Type	Precip Total (in)	Altitude Setting (inHg)
						(F)	(C)	(F)	(C)	(F)	(C)											
30	0028	7	BKN:07 20	4.00	-RA:02 [RA:61]	92	33.3	80	26.6	67	19.4	44	28	120	37	29.78				FM-16	T	29.74
30	0051	7	OVC:08 16	2.50	-RA:02 [RA:61]	91	33.0	79	26.2	66	19.0	44	23	130	33	29.79				FM-16	T	29.75
30	0056	7	OVC:08 16	2.50	-RA:02 [RA:61]	92	33.3	80	26.6	66	18.9	43	22	140		29.79	1	-0.09	29.79	FM-15	T	29.75
30	0107	7	BKN:07 17	4.00	-RA:02 [RA:61]	91	32.8	79	26.2	66	18.9	44	22	140		29.79				FM-16	T	29.75
30	0121	7	SCT:04 17	7.00	-RA:02 [RA:61]	91	32.8	79	26.2	67	19.4	45	23	150		29.80				FM-16	T	29.76
30	0156	7	CLR:00	8.00		90	32.2	78	25.8	68	20.0	48	20	150	25	29.81				FM-15	T	29.77
30	0256	7	CLR:00	8.00		91	32.8	79	26.2	66	18.9	44	20	170		29.81				FM-15	T	29.77
30	0356	7	CLR:00	9.00		89	31.7	78	25.4	68	20.0	50	11	190		29.81	1	-0.02	29.81	FM-15	0.00	29.77
30	0456	7	FEW:02 50	10.00		89	31.7	78	25.8	71	21.7	55	6	180		29.83				FM-15	0.00	29.79
30	0556	7	FEW:02 15 BKN:07 30	4.00	HZ:7 [FU:05] [HZ:05]	87	30.6	78	25.3	72	22.2	61	16	080		29.89				FM-15	T	29.85
30	0656	7	BKN:07 35	5.00	HZ:7 [FU:05] [HZ:05]	87	30.6	77	24.9	70	21.1	57	14	100		29.91	1	-0.10	29.91	FM-15	0.00	29.87
30	0756	7	BKN:07 90	7.00		88	31.1	78	25.4	71	21.7	57	7	170		29.89				FM-15	0.00	29.85
30	0856	7	CLR:00	8.00		91	32.8	80	26.5	71	21.7	52	7	190		29.84				FM-15	0.00	29.80
30	0956	7	CLR:00	10.00		94	34.4	82	27.7	70	21.1	46	5	VRB		29.85	5	+0.06	29.85	FM-15	0.00	29.81
30	1056	7	FEW:02 20 SCT:04 100	10.00		96	35.6	83	28.6	70	21.1	43	13	100		29.85				FM-15	0.00	29.81
30	1156	7	SCT:04 100	8.00		100	37.8	87	30.7	69	20.6	37	15	120	28	29.83				FM-15	0.00	29.79
30	1256	7	SCT:04 110	10.00		100	37.8	87	30.8	68	20.0	35	11	170	16	29.81	8	+0.04	29.82	FM-15	0.00	29.77
30	1356	7	SCT:04 110	10.00		101	38.3	88	31.4	68	20.0	34	10	120		29.80				FM-15	0.00	29.76
30	1456	7	CLR:00	10.00		102	38.9	90	32.1	67	19.4	32	14	120	20	29.77				FM-15	0.00	29.73
30	1556	7	CLR:00	10.00		103	39.4	91	32.9	66	18.9	30	14	140	21	29.75	8	+0.06	29.75	FM-15	0.00	29.71
30	1656	7	CLR:00	10.00		101	38.3	89	31.6	66	18.9	32	10	130		29.74				FM-15	0.00	29.70
30	1756	7	CLR:00	10.00		98	36.7	86	29.7	67	19.4	36	14	140		29.73				FM-15	0.00	29.69
30	1856	7	CLR:00	10.00		95	35.0	83	28.1	70	21.1	44	13	140		29.74	5	+0.01	29.74	FM-15	0.00	29.70
30	1956	7	CLR:00	10.00		92	33.3	80	26.7	69	20.6	47	11	130		29.76				FM-15	0.00	29.72
30	2056	7	CLR:00	10.00		91	32.8	80	26.4	70	21.1	50	10	140		29.79				FM-15	0.00	29.75
30	2156	7	CLR:00	10.00		88	31.1	78	25.8	73	22.8	61	11	130		29.79	1	-0.05	29.80	FM-15	0.00	29.75
30	2256	7	CLR:00	10.00		87	30.6	78	25.3	72	22.2	61	10	140		29.80				FM-15	0.00	29.76
30	2356	7	CLR:00	10.00		86	30.0	76	24.4	69	20.6	57	13	140		29.80				FM-15	0.00	29.76

FIGURE B-30 YUMA, AZ MCAS (KNYL) QCLCD – JULY 29

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data, and Information Service
Elev: 213 ft. Lat: 32.6500° N Lon: -114.6167° W
Station: YUMA MCAS, AZ US WBAN:03145

Local Climatological Data Hourly Observations July 2016 Generated on 06/19/2017

National Centers for Environmental Information
151 Patton Avenue
Asheville, North Carolina 28801

Date	Time (LST)	Station Type	Sky Conditions	Visibility	Weather Type (see documentation) AU AW MW	Dry Bulb Temp		Wet Bulb Temp		Dew Point Temp		Rel Hum %	Wind Speed (MPH)	Wind Dir (Deg)	Wind Gusts (MPH)	Station Press (inHg)	Press. Tend	Net 3-Hr Change (inHg)	Sea Level Press. (inHg)	Report Type	Precip Total (in)	Alti-meter Setting (inHg)
						(F)	(C)	(F)	(C)	(F)	(C)											
29	0057	6	CLR:00	10.00		90	32.2	78	25.7	66	18.9	45	6	180		29.48			29.69	FM-15	0.00	29.71
29	0157	6	CLR:00	10.00		90	32.2	79	25.9	69	20.6	50	13	150		29.48	5	+0.01	29.70	FM-15	0.00	29.71
29	0257	6	CLR:00	10.00		88	31.1	78	25.8	73	22.8	61	23	150		29.49			29.71	FM-15	0.00	29.72
29	0331	6	SCT:04 6	10.00		87	30.6	79	26.0	75	23.9	67	31	150	37	29.51				FM-16		29.74
29	0357	6	FEW:02 6	10.00		86	30.0	78	25.5	74	23.3	67	23	160		29.51			29.73	FM-15	0.00	29.74
29	0457	6	CLR:00	10.00		86	30.0	78	25.7	75	23.9	70	13	170		29.53	3	-0.05	29.75	FM-15	0.00	29.76
29	0557	6	FEW:02 140 FEW:02 200	10.00		85	29.4	78	25.8	76	24.4	75	8	140		29.54			29.75	FM-15	0.00	29.77
29	0657	6	FEW:02 140 SCT:04 200	10.00		86	30.0	79	26.3	77	25.0	75	7	130		29.55			29.77	FM-15	0.00	29.78
29	0757	6	FEW:02 140 FEW:02 200	10.00		89	31.7	80	26.5	75	23.9	63	9	140		29.55	0	-0.02	29.76	FM-15	0.00	29.78
29	0857	6	FEW:02 140 FEW:02 200	10.00		93	33.9	81	27.5	73	22.8	52	18	160		29.55			29.77	FM-15	0.00	29.78
29	0957	6	FEW:02 140	10.00		97	36.1	84	29.1	72	22.2	45	21	150		29.55			29.76	FM-15	0.00	29.78
29	1057	6	FEW:02 140 FEW:02 200	10.00		101	38.3	88	31.4	68	20.0	34	15	190		29.55	0	-0.00	29.76	FM-15	0.00	29.78
29	1157	6	FEW:02 140 FEW:02 200	10.00		102	38.9	89	31.9	69	20.6	35	13	170	20	29.53			29.75	FM-15	0.00	29.76
29	1257	6	FEW:02 140 FEW:02 200	10.00		104	40.0	92	33.2	68	20.0	31	13	210		29.51			29.73	FM-15	0.00	29.74
29	1357	6	FEW:02 140 FEW:02 200	10.00		106	41.1	95	34.8	67	19.4	28	10	170		29.49	8	+0.06	29.70	FM-15	0.00	29.72
29	1457	6	FEW:02 140 FEW:02 200	10.00		107	41.7	96	35.8	66	18.9	27	8	200	20	29.46			29.67	FM-15	0.00	29.69
29	1557	6	FEW:02 140 FEW:02 200	10.00		108	42.2	98	36.8	65	18.3	25	11	190	18	29.43			29.64	FM-15	0.00	29.66
29	1657	6	FEW:02 140 FEW:02 200	10.00		106	41.1	94	34.6	68	20.0	29	15	180		29.41	6	+0.07	29.63	FM-15	0.00	29.64
29	1757	6	FEW:02 140 FEW:02 200	10.00		105	40.6	93	34.1	67	19.4	29	17	170		29.40			29.61	FM-15	0.00	29.63
29	1857	6	FEW:02 140 FEW:02 200	10.00		101	38.3	88	31.4	68	20.0	34	14	190		29.40			29.62	FM-15	0.00	29.63
29	1957	6	FEW:02 140 FEW:02 200	10.00		98	36.7	85	29.6	68	20.0	38	13	170		29.43	3	-0.02	29.65	FM-15	0.00	29.66
29	2057	6	SCT:04 120 SCT:04 200	10.00		95	35.0	83	28.1	71	21.7	46	20	150		29.44			29.66	FM-15		29.67
29	2157	6	SCT:04 180 SCT:04 200	10.00		92	33.3	80	26.9	71	21.7	51	11	170		29.45			29.67	FM-15		29.68
29	2257	6	FEW:02 100 SCT:04 180 SCT:04 220	10.00		90	32.2	79	26.0	70	21.1	52	16	170		29.47	3	-0.04	29.69	FM-15	0.00	29.70
29	2333	6	FEW:02 60 SCT:04 100 SCT:04 180	6.00	DU:5 FU:04	91	32.8	80	26.4	70	21.1	50	22	100	31	29.55				FM-16		29.78
29	2339	6	SCT:04 60 SCT:04 100	2.50	DU:5 DU:07	92	33.3	80	26.7	68	20.0	46	14	120	31	29.53				FM-16		29.76
29	2343	6	SCT:04 60 SCT:04 100	1.50	DU:5 DU:07	93	33.9	81	27.1	68	20.0	44	16	090	25	29.54				FM-16		29.77
29	2357	6	VV:09 1	0.25s	DS:5 s DU:31 s	93	33.9	81	27.1	65	18.3	40	26	090	41	29.53			29.75	FM-15	T	29.76

FIGURE B-31 **YUMA, AZ MCAS (KNYL) QCLCD – JULY 30**

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data, and Information Service
Elev: 213 ft. Lat: 32.6500° N Lon: -114.6167° W
Station: YUMA MCAS, AZ US WBAN:03145

Local Climatological Data **Hourly Observations** **July 2016** Generated on 06/19/2017

National Centers for Environmental Information
151 Patton Avenue
Asheville, North Carolina 28801

Date	Time (LST)	Station Type	Sky Conditions	Visi- bility	Weather Type (see documentation)	Dry Bulb Temp		Wet Bulb Temp		Dew Point Temp		Rel Hum %	Wind Speed (MPH)	Wind Dir (Deg)	Wind Gusts (MPH)	Station Press (inHg)	Press. Tend	Net 3-Hr Change (inHg)	Sea Level Press. (inHg)	Report Type	Precip Total (in)	Alti-meter Setting (inHg)
					AU AW MW	(F)	(C)	(F)	(C)	(F)	(C)											
30	0030	6	FEW:02 60 FEW:02 120	1.00	DU:5 DU:07	92	33.3	80	26.6	64	17.8	40	22	110	29	29.54				FM-16		29.77
30	0040	6	FEW:02 120	4.00	DU:5 FU:04	92	33.3	80	26.7	63	17.2	38	18	110		29.54				FM-16		29.77
30	0057	6	FEW:02 120	6.00	DU:5 FU:04	92	33.3	80	26.7	63	17.2	38	13	120		29.54			29.76	FM-15	0.00	29.77
30	0157	6	CLR:00	10.00		91	32.8	79	26.1	64	17.8	41	11	160		29.53	0	-0.06	29.75	FM-15	0.00	29.76
30	0257	6	CLR:00	10.00		89	31.7	77	25.2	61	16.1	39	18	160		29.51			29.72	FM-15	0.00	29.74
30	0331	6	FEW:02 7	10.00		88	31.1	76	24.7	62	16.7	42	24	160		29.53				FM-16		29.76
30	0355	6	BKN:07 8	10.00		88	31.0	76	24.7	63	17.0	43	21	170		29.54				FM-16		29.77
30	0357	6	SCT:04 10	10.00		88	31.1	76	24.7	63	17.2	43	20	180		29.54			29.75	FM-15	0.00	29.77
30	0415	6	FEW:02 9 SCT:04 110	10.00		89	31.7	77	25.1	63	17.2	42	16	200		29.56				FM-16		29.79
30	0444	6	BKN:07 17 OVC:08 110	10.00		87	30.6	78	25.3	72	22.2	61	25	200	38	29.54				FM-16		29.77
30	0457	6	OVC:08 16	10.00		87	30.6	77	25.1	71	21.7	59	23	200	34	29.55	1	-0.04	29.76	FM-15	0.00	29.78
30	0512	6	SCT:04 60 BKN:07 100 BKN:07 180	4.00	VCDU:5 FU:04	86	30.0	76	24.4	69	20.6	57	24	210	38	29.55				FM-16		29.78
30	0557	6	SCT:04 50 BKN:07 100 OVC:08 150	10.00	RA:02 RA:62 TS:90	80	26.7	75	23.8	73	22.8	79	6	240		29.65			29.87	FM-15	0.31	29.88
30	0655	6	SCT:04 60 SCT:04 100 BKN:07 150	10.00	TS:90	81	27.0	75	24.0	73	23.0	79	7	360		29.66				FM-16		29.89
30	0657	6	SCT:04 60 SCT:04 100 BKN:07 150	4.00		81	27.2	76	24.4	74	23.3	79	8	350		29.66			29.88	FM-15	T	29.89
30	0722	6	SCT:04 60 SCT:04 100 BKN:07 150	2.50	BR:1	81	27.2	75	24.0	73	22.8	77	6	350		29.66				FM-16		29.89
30	0757	6	SCT:04 60 SCT:04 100 BKN:07 150	2.50	BR:1	82	27.8	76	24.2	73	22.8	74	6	340		29.63	0	-0.09	29.85	FM-15	0.00	29.86
30	0857	6	FEW:02 40 FEW:02 70	2.50	BR:1	82	27.8	77	25.2	76	24.4	82	13	110		29.59			29.80	FM-15	0.00	29.82
30	0908	6	FEW:02 41	2.50	BR:1	82	27.8	77	24.9	75	23.9	79	8	080		29.59				FM-16		29.82
30	0938	6	FEW:02 50	3.00	BR:1	83	28.3	77	24.8	74	23.3	74	11	170		29.60				FM-16		29.83
30	0957	6	CLR:00	3.00	HZ:7 HZ:05	84	28.9	78	25.3	75	23.9	74	11	200		29.59			29.81	FM-15	0.00	29.82
30	1057	6	CLR:00	10.00		91	32.8	80	26.9	74	23.3	57	15	200		29.60	5	+0.03	29.82	FM-15	0.00	29.83
30	1157	6	CLR:00	10.00		94	34.4	82	27.7	71	21.7	48	9	200		29.60			29.82	FM-15	0.00	29.83
30	1257	6	CLR:00	10.00		97	36.1	84	29.1	68	20.0	39	11	200	21	29.59			29.81	FM-15	0.00	29.82
30	1357	6	CLR:00	10.00		97	36.1	84	29.1	68	20.0	39	16	180		29.57	8	+0.03	29.79	FM-15	0.00	29.80
30	1457	6	CLR:00	10.00		97	36.1	84	29.1	71	21.7	43	20	200		29.56			29.77	FM-15	0.00	29.79
30	1557	6	CLR:00	10.00		94	34.4	82	27.7	71	21.7	48	17	200		29.53			29.75	FM-15	0.00	29.76
30	1657	6	CLR:00	10.00		98	36.7	85	29.6	69	20.6	39	14	210		29.51	8	+0.06	29.72	FM-15	0.00	29.74
30	1757	6	CLR:00	10.00		96	35.6	83	28.6	68	20.0	40	14	200		29.50			29.72	FM-15	0.00	29.73
30	1857	6	CLR:00	10.00		94	34.4	82	27.7	70	21.1	46	13	200		29.50			29.72	FM-15	0.00	29.73
30	1957	6	CLR:00	10.00		91	32.8	79	26.3	69	20.6	49	9	200		29.51	5	+0.00	29.73	FM-15	0.00	29.74
30	2057	6	CLR:00	10.00		89	31.7	78	25.8	71	21.7	55	7	190		29.53			29.75	FM-15	0.00	29.76
30	2157	6	CLR:00	10.00		88	31.1	78	25.4	71	21.7	57	10	200		29.55			29.77	FM-15	0.00	29.78
30	2257	6	CLR:00	10.00		86	30.0	77	24.8	71	21.7	61	8	200		29.56	1	-0.05	29.78	FM-15	0.00	29.79
30	2357	6	CLR:00	10.00		86	30.0	76	24.4	69	20.6	57	11	170		29.56			29.77	FM-15	0.00	29.79